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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,623	07/31/2002	Michael John Collins	1700.119	8848

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EXAMINER	
VAN, QUANG T	
ART UNIT	**PAPER NUMBER**
3742	

DATE MAILED: 08/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/064,623	COLLINS ET AL.
	Examiner	Art Unit
	Quang T Van	3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 June 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *28-46* is/are pending in the application.

4a) Of the above claim(s) *1-27* is/are withdrawn from consideration.

5)☒ Claim(s) *28-33 and 44* is/are allowed.

6)☒ Claim(s) *34-43 and 46* is/are rejected.

7)☒ Claim(s) *45* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 July 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

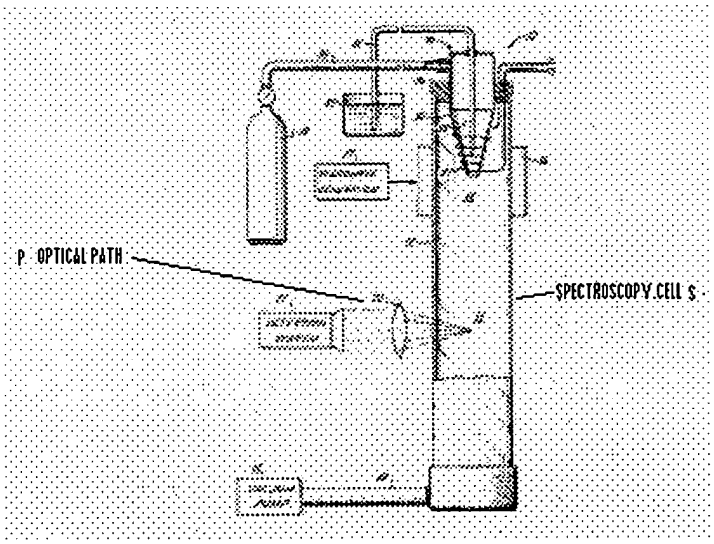
1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 34-35, 38 and 46 are rejected under 35 U.S.C. 102(b) as being anticipated by Anderson et al (US 4,225,235). Anderson discloses a system for analyzing the elemental or molecular composition of a sample comprising a microwave cavity (16); a flow cell (12, col. 3, lines 31-33) in said cavity; a spectroscopy cell (S, figure below) external to said cavity (16) and in fluid communication with said flow cell (12); and spectrometer (21) with said spectroscopy cell (S) in the optical path (P, figure below) of said spectrometer (21) for analyzing the characteristics of fluids flowing from said flow cell (12) and through said spectroscopy cell (S).



3. Claims 34-35 and 46 are rejected under 35 U.S.C. 102(b) as being anticipated by Peacock et al (US 4,427,633). Peacock discloses a system for analyzing sample comprising a microwave cavity (col. 4, lines 37-38); a flow cell (20, 36) in said cavity; a spectroscopy cell (12, 32) external to said cavity and in fluid communication with said flow cell (20, 36); and spectrometer (15) with said spectroscopy cell (12, 32) in the optical path of said spectrometer (15) for analyzing the characteristics of fluids flowing from said flow cell (20, 36) and through said spectroscopy cell (12, 32).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al (US 4,225,235) in view of Lauf et al (US 6,268,596). Anderson discloses substantially all features of the claimed invention except the step of directing a continuous flow of fluid through a single mode microwave cavity while applying microwave radiation to the cavity and to the continuous flow of materials therein. Lauf discloses the step of directing a continuous flow of fluid through a single mode microwave cavity while applying microwave radiation to the cavity and to the continuous flow of materials therein (figure 2, col. 6, lines 14-30). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize in

Anderson the step of directing a continuous flow of fluid through a single mode microwave cavity while applying microwave radiation to the cavity and to the continuous flow of materials therein as taught by Lauf for reducing microwave power to control temperature and reduce the efficient process of the certain chemical reaction.

6. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al (US 4,225,235) in view of Lauf et al (US 6,268,596) and further in view of Schlie (US 5,235,251). Anderson/Lauf disclose substantially all features of the claimed invention except the step of moderating the cavity conditions comprising cooling the fluid flow in the cavity. Schlie discloses the step of moderating the cavity conditions comprising cooling the cell (43), which contain fluid (nitrogen gas); thus, it is inherent to cool the fluid flow in the cavity (col. 5, lines 35-50). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize in Anderson/Lauf the step of moderating the cavity conditions comprising cooling the fluid flow in the cavity as taught by Schlie in order to prevent the cell and the fluid from being over heat.

7. Claims 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al (US 4,225,235) in view of Lauf et al (US 6,268,596) and Schlie (US 5,235,251) and further in view of Drew et al (US 5,313,061). Anderson/Lauf/Schlie disclose substantially all features of the claimed invention except a processor in signal communication with said spectrometer and with said cooling system. Drew discloses a processor in signal communication with said spectrometer and with said cooling system (figure 1a-b and col. 35, lines 33-36). It would have been obvious to one having

ordinary skill in the art at the time the invention was made to utilize in Anderson/Lauf/Schlie a processor in signal communication with said spectrometer and with said cooling system as taught by Drew in order to analyze and also control the temperature of the heating fluid.

8. Claims 41-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al (US 4,225,235) in view of Lauf et al (US 6,268,596), Schlie (US 5,235,251), Drew et al (US 5,313,061) and further in view of Strauss et al (US 5,387,397). Anderson/Lauf/Schlie/ Drew disclose substantially all features of the claimed invention except a pressure detector in fluid communication with said flow cell and in signal communication with said processor. Strauss discloses a pressure detector in fluid communication with said flow cell and in signal communication with said processor (col. 4, lines 31-52). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize in Anderson/Lauf/Schlie/ Drew a pressure detector in fluid communication with said flow cell and in signal communication with said processor as taught by Strauss in order to control the pressure of the flow heating fluid.

9. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al (US 4,225,235) in view of Lauf et al (US 6,268,596), Schlie (US 5,235,251), Drew et al (US 5,313,061) and further in view of Jennings et al (US 6,607,902). Anderson/Lauf/Schlie/ Drew disclose substantially all features of the claimed invention except a waveguide between said source and said cavity and in microwave communication with said source and said cavity. Jennings discloses a

waveguide between said source and said cavity and in microwave communication with said source and said cavity (col. 2, lines 46-56). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize in Anderson/Lauf/Schlie/ Drew a waveguide between said source and said cavity and in microwave communication with said source and said cavity as taught by Jennings in order to guide the magnetron from the microwave source to the cavity.

10. Claims 28-33 and 44 are allowed.

11. Claim 45 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not show or suggest the step of moderating the conditions in the cavity in response to the spectroscopic evaluation as recited in claims 28-33; a flow cell releasably engaged with said attenuator in a manner that fixes the positions of said attenuator and said flow cell with respect to one another when they are engaged and that correspondingly fixes said flow cell in the same position with respect to said cavity when said attenuator is engaged with said cavity as recited in claim 44; and a system for moderating conditions in the cavity in response to spectroscopic analysis by said spectrometer of fluids flowing from said flow cell and through said spectroscopy cell as recited in claim 45.

Response to Amendment

13. Applicant's arguments filed 6/02/2004 have been fully considered but they are not persuasive.

Applicant argues Anderson et al does not anticipate claims 34-35 and 38. The Examiner disagrees. Anderson discloses a system for analyzing the elemental or molecular composition of a sample comprising a microwave cavity (16); a flow cell (12, col. 3, lines 31-33) in said cavity; a spectroscopy cell (S, figure below) external to said cavity (16) and in fluid communication with said flow cell (12); and spectrometer (21) with said spectroscopy cell (S) in the optical path (P, figure below) of said spectrometer (21) for analyzing the characteristics of fluids flowing from said flow cell (12) and through said spectroscopy cell (S). Anderson meets all the claim limitations; therefore, Anderson anticipates claims 34-35 and 38.

Applicant also argues Peacock does not anticipate claims 34-35. The Examiner disagrees. Peacock discloses a system for analyzing sample comprising a microwave cavity (col. 4, lines 37-38); a flow cell (20, 36) in said cavity; a spectroscopy cell (12, 32) external to said cavity and in fluid communication with said flow cell (20, 36); and spectrometer (15) with said spectroscopy cell (12, 32) in the optical path of said spectrometer (15) for analyzing the characteristics of fluids flowing from said flow cell (20, 36) and through said spectroscopy cell (12, 32). Peacock meets all the claim limitations; therefore, Peacock anticipates claims 34-35.

14. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by

combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Applicant argues "there is no motivation to combine the teachings of Anderson et al and Lauf et al". Anderson discloses substantially all features of the claimed invention except the step of directing a continuous flow of fluid through a single mode microwave cavity while applying microwave radiation to the cavity and to the continuous flow of materials therein. Lauf discloses the step of directing a continuous flow of fluid through a single mode microwave cavity while applying microwave radiation to the cavity and to the continuous flow of materials therein (figure 2, col. 6, lines 14-30). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize in Anderson the step of directing a continuous flow of fluid through a single mode microwave cavity while applying microwave radiation to the cavity and to the continuous flow of materials therein as taught by Lauf for reducing microwave power to control temperature and reduce the efficient process of the certain chemical reaction.

With regard to claim 36, Applicant argues "there is no motivation to in corporate a cooling system such as that of Schlie into the Anderson et al apparatus". Anderson/Lauf disclose substantially all features of the claimed invention except the step of moderating the cavity conditions comprising cooling the fluid flow in the cavity. Schlie discloses the step of moderating the cavity conditions comprising cooling the cell

(43), which contain fluid (nitrogen gas); thus, it is inherent to cool the fluid flow in the cavity (col. 5, lines 35-50). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize in Anderson/Lauf the step of moderating the cavity conditions comprising cooling the fluid flow in the cavity as taught by Schlie in order to prevent the cell and the fluid from being over heat.

With regard to claims 39-40, Applicant argues Drew 's apparatus does not use microwave energy for any purpose...Thus, there is no motivation to combine the teaching of Drew et al with other cited patents. The Examiner disagrees. Drew's reference is cited for a processor in signal communication with said spectrometer and with said cooling system. Although Drew reference does not use microwave energy; however, Drew discloses a spectrometer system and it is considered in the same field and is good to combine with other cited patents.

15. With regard to claims 41-42, Applicant argues "there is no motivation for one skilled in the art to select a significantly different control mechanism " recited in a response (filed on 6/02/2004) page 26, lines 10-12. Anderson/Lauf/Schlie/ Drew disclose substantially all features of the claimed invention except a pressure detector in fluid communication with said flow cell and in signal communication with said processor. Strauss discloses a pressure detector in fluid communication with said flow cell and in signal communication with said processor (col. 4, lines 31-52). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize in Anderson/Lauf/Schlie/ Drew a pressure detector in fluid communication with said flow cell and in signal communication with said processor as taught by Strauss in

order to control the pressure of the flow heating fluid. Further, it is well known in the art to us a pressure detector (transducer) to monitor and control the pressure of the flow fluid.

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang T Van whose telephone number is 703-306-9162. The examiner can normally be reached on 8:00Am 7:00Pm M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 703-305-5766. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

QV
August 23, 2004

Quang T Van
Primary Examiner
Art Unit 3742